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ABSTRACT

The psychometric properties of the Mainstreaming Planning Inventory, a 40-item composite scale for measuring attitudes toward mainstreaming in education, were examined. Using the responses of 90 faculty in a college of education, of 261 undergraduate students in that college, and of 40 graduate students in education, alpha coefficient and factor analyses were conducted to provide comparative data on elevation and variability of attitudes. Test items, factor loadings, standard deviations, and a comparison of means on items are appended. The factors which emerged from analysis involved the acceptance of mainstreaming; the resulting adjustments in the classroom; the emotional demands and sensitivity of the handicapped student; the confidence of teachers to cope with demands caused by mainstreaming; positive expectations for the handicapped; treatment of handicapped students; views of parents of the handicapped; and the effects of mainstreaming on normal students. Differences between pairs of means generally appeared on items relating to the ability of the handicapped to perform, the advocacy of mainstreaming, and the benefits to the handicapped. Overall, the three samples were favorable toward mainstreaming and other issues related to the handicapped, with the faculty the most approving. Cautions and philosophical limitations are also discussed. (Author/JAC)

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ED160642

# EVALUATION AND REVISION OF AN INVENTORY FOR MEASURING ATTITUDES TOWARD MAINSTREAMING

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1977

College of Education

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Fayetteville

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A B S T R A C T

EVALUATION AND REVISION OF AN INVENTORY FOR MEASURING ATTITUDES TOWARD MAINSTREAMING

As a part of a federally funded project the authors undertook a study of a 40-item composite scale for measuring attitudes toward mainstreaming in education. Using the responses of 90 faculty in a college of education, of 261 undergraduate students in that college, and of 40 graduate students in education, they did various analyses to throw light on the psychometric properties of the inventory as well as to provide comparative data on elevation and variability of attitudes. Both the alpha coefficient and factor analysis revealed a main dimension measuring general attitude toward mainstreaming and the handicapped. A subset of 17 items yielded alpha coefficients on the order of .92, and two subsets of 8 items were estimated to yield coefficients of about .85--high enough for assessment of groups. While the factor analyses revealed further, smaller dimensions, these subscales would require lengthening to be useful. As to comparative data, the three composite samples all averaged favorably toward mainstreaming and other issues related to the handicapped, with the faculty being the most approving. The reported concluded with a discussion of some cautions and philosophical limitations.

## Background of this Report

Funds have been provided by the United States Office of Education, Bureau of Education of the Handicapped, to 81 colleges and universities for the Dean's Grant Projects. The primary purpose of these projects is to prepare regular educators to participate in mainstreaming. The focus varies from changes in the curriculum of the regular teacher-in-training to in-service education of teachers. Another focus is that of faculty development, involving the faculties of the various teacher-training institutions. The University of Arkansas at Fayetteville Dean's Project has as its population, the faculty of the College of Education. Project M.U.E. (Mainstreaming: United Effort) is aimed at providing information and assistance to the faculty as they incorporate P.L. 94-142 and its implications into their regular coursework.

Attitude toward mainstreaming has been an area of interest in most Dean's Grants, regardless of the target population. Attempts at measuring the attitude of the groups involved have taken various forms, but pencil-and-paper approaches are most common. Project M.U.E. also has, as a small part, an objective dealing with the attitudes of faculty and students in the College of Education.

The Project Staff contacted the University of Minnesota, Leadership Training Institute, National Support Systems Project, for help on attitudinal measurement. That Office provided the attached

40-item composite scale, adapted from Baker's "Mainstreaming Inventory" and the Attitude Toward Disabled Persons Scale. That composite scale was given to several groups, student as well as faculty, in late summer, 1977. Because of the length of the scale and the suggestion of its authors to do further studies, we began an examination of the scale. In particular, we wanted to check psychometric properties of the inventory with a view toward revision.

## Administration of Inventory

The first group at the University of Arkansas to take the inventory was the faculty of the College of Education. A total of 90, including several graduate teaching assistants, took it during an in-service program the third week in August, 1977.

The second group consisted of 261 undergraduate students enrolled in Educational Foundations 2003, Changing Schools. By and large, they were second-year students just entering their formal study of Education. They took the form in September of this year.

Finally, two samples of graduate students also took the inventory during September. A group of 26 was enrolled in Educational Foundations 5013, Introduction to Educational Research, a master's level course at the off-campus graduate center in Little Rock. This was a mixed group of teachers, counselors, and administrators. Another group of 14 were taking a doctoral level course in educational research on the Fayetteville campus.

## Treatment of Data

Responses to such an inventory afford more than one way of treating the data. One way is to summarize the responses in terms of descriptive statistics--percent choosing each point on the rating scale for each item, variablility of opinion on an item, average total score, etc. Such statistics are, of course, usually the main evidence one seeks from such an instrument. We shall report this kind of information but first concentrate on another way of treating the data--namely, study of the internal consistency of the device as revealed through the responses of the several samples. For this sort of inquiry we undertook a series of analyses as outlined in Table 1.

In the first series of steps outlined, we used a computing program that yields means, standard deviations, item-scale correlations, item-total score correlations, and alpha coefficients as well as individual scores (Program"TESTAT" after Veldman, 1967, pp.170-181). The last-named statistic is an over-all measure of the internal consistency of the total instrument (Cronbach, 1951).

This analysis, in turn, led to the second series of runs, various factor analyses using a local program called "FACANA", a version incorporating certain standard and widely used mathematical routines.

Table 1

Outline of Data-Analysis

| Computing Program | Variables | Samples |
|---|---|---|
| TESTAT | 40 items, Total Score | Faculty; N=90 |
| TESTAT | 40 items, Total Score | Undergraduate; N=261 |
| TESTAT | 40 items, Total Score | Graduate; Little Rock, N=26 |
| FACANA | 40 items | Faculty |
| FACANA | 40 items | Undergraduate |
| FACANA | 40 items + 3 biases | Faculty |
| FACANA | 40 items + 3 biases | Composite of 2 graduate classes; N=40 |
| TESTAT | 39 items; 9 part scores or scales; total score | Faculty |
| TESTAT | 39 items; 9 part scores or scales; total score | Undergraduate |

In this series we were trying to uncover clusters of items that formed more or less independent subscales, as well as to check for the presence of a major, more or less general attitude toward mainstreaming. Later, in two intermediate runs we re-scored the data so as to measure certain tendencies, often called "response-biases" in the psychometric literature--tendency to prefer the middle or neutral rating and tendencies to use extreme points on the rating scale. These intermediate runs, done on two of the three composite samples, yielded three instrument-variables on each respondent--(1) number of times out of 40 the person chose the neutral point, (2) average measure of extremeness in rating by using the high end of the scale, and (3) average measure of extremeness in rating using the low end. We measured extremeness by subtracting 3 from the rating given on each item by a person.

The factor-analysis program builds on a principal-components analysis of the intercorrelations among the items, using ones in the diagonal. This program does an orthogonal rotation of the principal components with the so-called varimax routine. We called for solutions yielding successively more common factors through a total of ten.

In the final series of runs, we resorted to the test-analysis program to check the alpha coefficients on the total score and on nine scales suggested by the factor analysis. At this point we dropped one item that did not fit in well with the others.

## Psychometric Properties of the Inventory

### Use of a total score

A first question about this inventory is whether or not a total score would have enough coherence to be meaningful. On the basis of the alpha coefficient--which is an index of over-all internal consistency--the answer would be Yes. This coefficient ranged from .905 to .937 on the samples, where the possible values are from zero to 1.

Another way to examine this question is to look at the percent of total variance accounted for by the first "principal component" and at the loadings (correlations) of the individual items on this component. The first principal component is an underlying dimension among the responses which is isolated mathematically. In the case of the undergraduates, this component accounted for 25.1% (10.04/40) of the total variance and 36 of the 40 items had loadings, positive or negative, that reached statistical significance at the .01 level, the critical value being .163 as estimated from the Burt-Banks formula (Burt and Banks, 1947). In the case of the faculty, comparable figures were 31.1% (12.42/40) and 36 of 40 items also, the critical value for a loading being .272 because of the smaller sample. For both groups covered here, the figures from the factor analysis tell a similar story though not as strong.

One may reasonably ask why the alpha coefficient is so high in view of the relatively small percent of total variance accounted for. First, many of the items do have high loadings on the main component or on the main factor; they carry the most weight. Secondly, the items with low loadings add their contribution, however small. The cumulative

effect of many small loadings is to increase the internal consistency (Cronbach, 1951).

Another question about this inventory is whether or not it could be shortened much and still yield a useful over-all measure of opinion or attitude. Based upon factor analyses and a follow-up test analysis, the answer is also Yes. For the undergraduate and faculty groups, alpha coefficients on a main 17-item composite were .921 and .928, respectively. We estimate from formulas that an eight-item composite would yield a coefficient of about .85, which would be high enough for most purposes.

As a short version we suggest a composite of items 10, 11, 14, 20, 23, 36, 38, and 7, in that order and changing 38 to read ". . .benefit the teacher. . ." If a user wanted two parallel composites to use as alternate forms as in pre- and post-testing, we suggest the following, using the order given:

Form II-A - Items 10, 11, 32, 23, 36, 6, 38 as revised above, and 7.

Form II-B - Items 30, 14, 20, 37, 22, 26, 31, and 1.

An inspection of the content of these two sets will show that six pairs of items are closely matched. It will be necessary, of course, to reverse the scale when scoring the negative items, which are underlined above. Assuming that the same five-point scale is used, one would subtract the given rating on each negative item from the value 6.

Possibility of subscales

The relatively low percent of total variance accounted for by a main component or factor confirmed the usefulness of factor analysis. Inspection of the statements also suggested that more than one issue

was being considered in the inventory. In view of these facts, then, one would expect factor analysis to uncover some other dimensions underlying the responses. This was indeed the outcome, as shown in Tables 2 and 3 in the appendix. We shall interpret in some detail the important findings on the large undergraduate sample, but not on the faculty or the graduate students. These last two groups, especially the faculty, yielded patterns like that of the undergraduate sample.

It is not hard to see that the first factor emerging from the analysis is a main dimension registering general acceptance of mainstreaming. It portrays mainstreaming as mutually beneficial to the handicapped, other pupils, and the teacher. The second factor isolated a cluster predicting that mainstreaming will require adjustments in the classroom and of the teacher--almost a self-evident consequence. Important loadings were on items 9, 29, and 40. The third factor grouped items 12, 15,16, and 35, expressing a confidence on the part of the teacher to cope with the new demands. The fourth factor, captured on items 8, 19, and 35, dealt with the issue of whether the handicapped are more emotionally demanding and sensitive than other persons. Items 25, 28, and 33 defined the fifth factor and measured the degree of positive expectation for the handicapped--for adult citizens as well as pupils. Factor 6 highlighted the issue of rejecting segregation of the handicapped. Items 3, 4, and 5 defined the seventh factor and emphasized the theme of treating the handicapped like normal. Items 27, 31, and 39, on the eighth factor, seem to reflect the views of the parent of a child who has a learning or emotional

problem. The ninth factor, defined by loadings on items 17, 18, and 27, dealt with the effect of the presence of handicapped upon the emotional well-being and behavior of the normal child. Finally, the last factor isolated for this sample was largely confined to a single item, number 24, and could well be disregarded. It should be noted that the several factors following the main one, even though often well-defined, were small in scope and in contribution to total variance. It should also be noted that some statements were complex factorially in that they had important loadings on more than one factor. This fact indicates that certain statements bring out more than one issue in the minds of the persons responding.

We could summarize these several factors by expressing the core of each one as a question:

1. On balance, do you think that mainstreaming is a good thing?
2. Do you think that mainstreaming will require changes in teaching and in related circumstances?
3. As a teacher, would you have confidence in being able to meet the new demands?
4. Are the handicapped more emotionally demanding and sensitive than other persons?
5. Do you think the handicapped will respond well in school and become successful, contributing citizens?

And so on, though the remaining factors seem generally to be less distinctive and useful than the five above.

To check the possibility of using subscales matching the factors, we ran program TESTAT after first assigning certain items to scales according to the results of the factor analysis. Disregarding scales 8 and 10, for which we had assigned only one item, and scale 6, for which the alpha coefficient was a mere .29, scales 2-5, 7, and 9

had alpha coefficients of .46, .59, .56, .65, .40, and .57, respectively. These are low values but consistent with the small number of statements on each scale--three items on each except number 3 which had four assigned to it. The import is that scores derived from them would be useful only for the crudest of comparisons--suggestive but not likely to be conclusive. Incidentally, such subscales are not quite the same as the original factors, which typically had other items contributing small loadings. We are not here going into the matter of deriving more refined "factor scores" which requires the use of special weights and verification on other samples.

As an incidental finding, we note here that a classification of the statements into logical categories may not match closely the results of a factor analysis. While there were some close parallels between the latter and the classification by a group of five "experts" at the University of Minnesota (see Appendix), there were some important differences too. The most important difference was in the emergence of a fairly broad general attitude toward mainstreaming and the handicapped.

## Comparative Data on Elevation and Variability

To understand an instrument such as this better, it is also helpful to look at basic statistics such as measures of elevation and variability on individual items for defined groups of persons. We offer here a modicum of such descriptive detail, which may be of interest to certain readers. We caution here that these data are possibly peculiar to one setting and may not hold for various groups

elsewhere. These data are in no sense to be regarded as "norms".

Considering the average rating on all 40 items, after reversing the scale for negatively worded statements, we found that our three composite samples showed an over-all tendency to be favorable toward mainstreaming and other issues related to the handicapped. These over-all averages hovered around a central value of about 3.5 on a scale from 1 to 5.

Table 4 gives the details on individual items for the three samples. Each line reports an analysis of variance (comparison of means) for that item, together with mention of any difference between a pair of means that seemed to be large enough to be taken seriously--i.e., treated as other than a chance difference. Generally, such differences came out on items relating to the ability of the handicapped to perform, the advocacy of mainstreaming, and the benefits to the handicapped. These differences most often fell on a continuum from least positive on the part of the undergraduates to most positive on the part of the faculty, with the post-graduate sample falling in between.

## Some Final Cautions

Our analysis may leave the impression that we are endorsing mainstreaming and this way of evaluating opinions about or attitudes toward it. This is not necessarily so. As a disclaimer, we close with some major cautions--limitations, really.

A first important limitation is that this technique demands a series of abstract judgments, highly general and out of context. The

statements deal with the handicapped as a group and without reference to specifics such as the kind of handicap, the tasks to be done by the learner, resources available, and other circumstances. Most respondents would prefer to say "It depends," and go on to qualify their opinion. Yet, with the exception of the middle response, which may be a kind of dodge, the technique is more or less forced choice. It oversimplifies.

A second major limitation is that the technique seems to presuppose that mainstreaming is the solution to the problem of educating the handicapped equitably. There is a risk that teachers, including those in training, will be evaluated with respect to such attitudes. We are inclined to agree with Scriven that it is improper to test for a positive attitude to mainstreaming in prospective teachers until overwhelming evidence shows that it is better than alternatives such as segregated education (Scriven, 1976, p. 66). He regards the current evidence as scant, to say the least, and silent on criteria such as undesirable effects on the normal and gifted learners. Proper evaluation of mainstreaming must necessarily be broad and thus consider total impact upon teacher, regular students, and the handicapped. Questions to be answered would include what trade-offs are required to carry out mainstreaming.

A final caution centers on the well-recognized distinction between opinion and action. What one records on a paper-and-pencil form may not foretell action in real-life situations. Any one wanting to assess behavioral change on the part of those involved in mainstreaming would do well to use observation along with or in place of this kind of form. Any statement concerning change in attitude as a result of an

intervention and measured by this kind of scale should be tempered with the caution that what is being measured is verbal and not necessarily behavioral.

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APPENDIX A

Project Evaluation Inventory II

PROJECT EVALUATION INVENTORY II - "Opinions"

Attitude subscales: (Items with / are not included in the subscale or composite score.)

1. General attitude towards handicapped persons.

   5, 9, 11*, 25*, 27*, 30*, 36*, 43*, 44. (8 items)

2. Teacher attitude towards regular class p acement of handicapped children.

   1*, 8*, 10, 20, 48. (5 Items)

3. Teacher's confidence in own ability to work with handicapped students.

   6, 16, 21*, 31*, 45. (4 items)

4. Teacher's attitude about the degree to which integration of handicapped students would require changed working conditions, techniques, materials, etc.

   12, 13, 19, 32*, 37, 50. (4 items)

5. Teacher attitude towards the behavior and motivation of handicapped students.

   4, 7, 15, 17, 23, 28*, 35, 39. (5 items)

6. Teacher attitude toward the effect of integration on the self-concept and social relationships of the handicapped.

   14*, 18, 26*, 34, 38, 41, 42, 46. (6 items)

7. Attitude toward the effects of integration of handicapped students on the other non-handicapped students.

   2, 22*, 29*, 33*, 47. (5 items)

8. Teacher's attitude about parents' reaction to regular class placement of handicapped students.

   3, 24*, 40, 49. (3 items)

Composite attitude scale:

All items except not including items 3, 5, 9, 13, 19, 23, 34, 35, 39, and 41.

(Note-comments from 5 "experts" indicated that the ten items above were unclear, not properly scaled, or could be interpreted in more than one way and were thus eliminated from computations. Nevertheless, the remaining items should be examined further for similar defects.

APPENDIX B

PROJECT EVALUATION INVENTORY II

Directions

# PROJECT EVALUATION INVENTORY II

## "Opinions"*

This inventory is to be completed twice by professional education personnel in each building served by the St. Paul Pilot Inservice Training Project. The inventory should be completed once before the beginning of the course offered by the project, and once following the completion of the course.

All information supplied by individuals is confidential, and the results of this inventory will be made available only in group summary form without identifying information.

It is extremely important, however, for the research purposes of this project evaluation inventory, that the various questionnaires of each individual be connected. For this reason each individual completing the project evaluation questionnaires is asked to indicate the last four digits of his or her social security number and the name of the school. By connecting the numbers it will be possible to connect the questionnaires without identifying individuals. It is essential that this information be provided on each project evaluation questionnaire.

INSTRUCTIONS:

1. Provide the last four digits of your social security number and the name of your school on the top of page 2 and succeeding pages.

2. This inventory consists of a set of statements about handicapped individuals, followed by a scale from "1" strongly disagree to "5" strongly agree.

   In all statements, the word "handicapped" refers to those students who find achievement in a school setting unusually difficult because of intellectual, emotional, sensory, physical, or perceptual deficits.

   All persons completing this form, regardless of their actual roles in their school, should complete this inventory as if they were assigned to a classroom teaching situation.

   For each statement, please circle the number which most accurately represents your current opinion about the statement.

| For example: | strongly disagree | disagree | no opinion | agree | strongly agree |
|---|---|---|---|---|---|
| Handicapped students should eat more than they do. | 1 | 2 | 3 | 4 | 5 |

3. Please begin.

---

*This inventory is adapted from the "Mainstreaming Inventory" by Baker, and portions of the ATDP Scale--Form A (Bates Modification, 1965).

APPENDIX C

Directions

Student Survey

Explanation: As a part of a research study on mainstreaming, you are being asked to complete the following survey, consisting of two parts. It well deal only with GROUP results; no individuals will be identified. THERE IS NO RELATIONSHIP OR EFFECT ON YOUR GRADE. Your instructor has agreed to allow us to come into his class and ask your assistance.

INSTRUCTIONS: (for person administering survey)

1. Pass out answer sheets for Part A.
2. HAVE STUDENTS PUT SECTION # of class and their ID # in the spaces provided at the top of the answer sheet. THIS IS IMPORTANT.
3. Remind them that for Part A they are to write only on the answer sheets, not the booklet.
4. Have them put an X ON TOP OF THE Response. . . .not a circle. . . this will facilitate our scoring. Go through the scale with them:

| SD | D | N | A | SA |
|---|---|---|---|---|
| Strongly Disagree | Disagree | No Opinion | Agree | Strongly Agree |

5. There are no correct answers. These are opinions. No relation to grade.
6. Explain that for Part B they are to mark the booklet. Part B will be given as each finishes part A and after they have turned in Part A's booklet and answer sheet.
7. Pass out Part B

APPENDIX D

DEAN'S GRANT: MAINSTREAMING PLANNING INVENTORY

DEAN'S GRANT: MAINSTREAMING
PLANNING INVENTORY

Part A

Last 4 Social Security digits: _ _ _ _

Put an X on top of the response which most accurately represents your current opinion about the statement. There are no correct answers.

| | | strongly disagree | disagree | no opinion | agree | strongly agree |
|---|---|---|---|---|---|---|
| 1. | I think that the full time special education class is the best placement for handicapped students. | SD | D | N | A | SA |
| 2. | I believe that average children will profit from their contact with handicapped students needs. | SD | D | N | A | SA |
| 3. | Handicapped students are more like normal students than they are different from them. | SD | D | N | A | SA |
| 4. | It would be best if handicapped persons would live and work with non-handicapped people. | SD | D | N | A | SA |
| 5. | As with non-handicapped students, teachers should require handicapped students to share accountability for their learning. | SD | D | N | A | SA |
| 6. | Having to teach handicapped pupils places an unfair burden on the majority of classroom teachers | SD | D | N | A | SA |
| 7. | Assignment of a handicapped child to a regular classroom is a wise administrative decision. | SD | D | N | A | SA |
| 8. | Most handicapped persons want more affection and praise than other people. | SD | D | N | A | SA |
| 9. | Integration of handicapped students will require most teachers to learn and use new techniques and materials. | SD | D | N | A | SA |

| | | | | | | |
|---|---|---|---|---|---|---|
| 10. | I believe that placing a handicapped student in a typical classroom would damage the student's self-concept | SD | D | N | A | SA |
| 11. | A handicapped child will be motivated to learn in a regular classroom. | SD | D | N | A | SA |
| 12. | I am confident that I will be able to make handicapped students feel comfortable in my classroom. | SD | D | N | A | SA |
| 13. | Handicapped children should compete with normal children. | SD | D | N | A | SA |
| 14. | As a result of placement in a regular classroom, a handicapped child will develop a more positive attitude toward school. | SD | D | N | A | SA |
| 15. | The integration of handicapped students into a regular classroom represents an opportunity for the teacher to grow both personally and professionally. | SD | D | N | A | SA |
| 16. | In my role as an educator, I have little confidence in my ability to control whether students make scapegoats out of "mainstreamed" handicapped. | SD | D | N | A | SA |
| 17. | With a handicapped child in a regular classroom, there will be an increase in the number of behavior problems among the other children. | SD | D | N | A | SA |
| 18. | The presence of a handicapped child in a regular classroom will be a cause for complaints from the parents of the other children. | SD | D | N | A | SA |
| 19. | Handicapped persons are usually more sensitive than other people. | SD | D | N | A | SA |
| 20. | Placement of a handicapped child in a regular classroom will likely result in his becoming socially withdrawn. | SD | D | N | A | SA |

| | | | | | | |
|---|---|---|---|---|---|---|
| 21. | Handicapped people should not have to compete for jobs with normal persons. | SD | D | N | A | SA |
| 22. | A handicapped child will be disruptive in a regular classroom. | SD | D | N | A | SA |
| 23. | I think that the integration of handicapped students into the regular classroom will harm the educational achievement of average students. | SD | D | N | A | SA |
| 24. | The driving test given to a handicapped person should be more severe than the one given to the non-handicapped. | SD | D | N | A | SA |
| 25. | A handicapped child will not respond even to your best teaching efforts. | SD | D | N | A | SA |
| 26. | There is not enough time in a teacher's day to deal satisfactorily with the different needs of both average and handicapped pupils. | SD | D | N | A | SA |
| 27. | I believe that average students are uncomfortable when they are with children who have obvious physical deformities. | SD | D | N | A | SA |
| 28. | Handicapped workers cannot be as successful as other workers. | SD | D | N | A | SA |
| 29. | Integration of handicapped students will require most teachers to change the physical arrangements and management of their classrooms to increase the variety of learning environments available to children. | SD | D | N | A | SA |
| 30. | A handicapped child will develop a more positive self-concept as a result of being placed in a regular classroom. | SD | D | N | A | SA |
| 31. | If I were the parent of a child who had a learning problem, I would want him to be in a regular classroom for most of the school day. | SD | D | N | A | SA |
| 32. | A handicapped child will likely form positive social relationships with other children in a regular classroom. | SD | D | N | A | SA |

| | | | | | | |
|---|---|---|---|---|---|---|
| 33. | Handicapped people usually do not make much of a contribution to society. | SD | D | N | A | SA |
| 34. | Handicapped persons don't want any more sympathy than other people. | SD | D | N | A | SA |
| 35. | I generally look forward to the challenge of working with handicapped children. | SD | D | N | A | SA |
| 36. | The experience of being in a regular classroom will increase the chances of a handicapped child attaining a more productive and independent place in society. | SD | D | N | A | SA |
| 37. | I believe that average students need the experience of being in contact with handicapped students in an academic setting. | SD | D | N | A | SA |
| 38. | Given my current understanding, I believe that "mainstreaming" will benefit me as a teacher, as well as all children. | SD | D | N | A | SA |
| 39. | If I were the parent of a child who had an emotional problem, I would want him to be in a regular classroom for most of the school day. | | | | | |
| 40. | Integration of handicapped students will require most teachers to use classroom time differently and perhaps more efficiently than is not the case. | SD | D | N | A | SA |

APPENDIX E

TABLE 2

Rotated Factor Loadings and Communalities
for the Undergraduate Sample

TABLE 2

Rotated Factor Loadings and Communalities
for the Undergraduate Sample

| Item | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Comm. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | -46 | 12 | -18 | 01 | 11 | -53 | -16 | 03 | -02 | -17 | 61 |
| 2 | 35 | 09 | -19 | -29 | 16 | 36 | -25 | 05 | 14 | 18 | 52 |
| 3 | 15 | -17 | 12 | 10 | -19 | 27 | -48 | -18 | -06 | 11 | 46 |
| 4 | 19 | -02 | 03 | -07 | -00 | 05 | -68 | 03 | 02 | -18 | 55 |
| 5 | 10 | 13 | 04 | 04 | -20 | -20 | -60 | -09 | 18 | 07 | 52 |
| 6 | -47 | 13 | -03 | -07 | 33 | 27 | -21 | -05 | -21 | -01 | 52 |
| 7 | 73 | 03 | 18 | 02 | 09 | 10 | -12 | 08 | 17 | -07 | 64 |
| 8 | -22 | 11 | 04 | -73 | 05 | -02 | 16 | -26 | -03 | -22 | 73 |
| 9 | -09 | 75 | 06 | 04 | 05 | -06 | -06 | -05 | -09 | 03 | 60 |
| 10 | -71 | 02 | -08 | -04 | 05 | -34 | 03 | -12 | -07 | -09 | 66 |
| 11 | 74 | -03 | 13 | 13 | 01 | -01 | -13 | 01 | 16 | -07 | 62 |
| 12 | 32 | -10 | 64 | 07 | -12 | -17 | -05 | 12 | 08 | -10 | 60 |
| 13 | 53 | -13 | -03 | 19 | -10 | 12 | -23 | -03 | 03 | 01 | 42 |
| 14 | 70 | 01 | 08 | 11 | 05 | 13 | -16 | -03 | 09 | -09 | 57 |
| 15 | 31 | 09 | 59 | 03 | -02 | 12 | -21 | -19 | 11 | -14 | 57 |
| 16 | 04 | -07 | -59 | 11 | -02 | -18 | -02 | 03 | -13 | -35 | 54 |
| 17 | -27 | 06 | -03 | -07 | 10 | -05 | 18 | 07 | -70 | -20 | 66 |
| 18 | -21 | 22 | -11 | 00 | 01 | 10 | 03 | -13 | -67 | -01 | 59 |
| 19 | -18 | -12 | 11 | -66 | -02 | -13 | -03 | 15 | -28 | -10 | 62 |
| 20 | -64 | -02 | -14 | -15 | 09 | -17 | 04 | 09 | -36 | -16 | 65 |
| 21 | -25 | 05 | 01 | -27 | 07 | -53 | 12 | 15 | -03 | 15 | 49 |
| 22 | -49 | 03 | -05 | -17 | 27 | -04 | -08 | 17 | -24 | -27 | 52 |
| 23 | -60 | 13 | -11 | 03 | 21 | -12 | -02 | 18 | -38 | -15 | 65 |
| 24 | -04 | 08 | 00 | -09 | 15 | 02 | -03 | 02 | -04 | -78 | 65 |
| 25 | -05 | 03 | -24 | -06 | 60 | 21 | -01 | 16 | -11 | -23 | 56 |
| 26 | -56 | 25 | -20 | -04 | 06 | 11 | -04 | 12 | -25 | -15 | 53 |
| 27 | -08 | 04 | -03 | -17 | 18 | -28 | -10 | 43 | -49 | 26 | 65 |
| 28 | 01 | -04 | -08 | -08 | 73 | -13 | 08 | 10 | -02 | -13 | 60 |
| 29 | -01 | 77 | -00 | -13 | -13 | -01 | 07 | 04 | -13 | -14 | 67 |
| 30 | 74 | -04 | -00 | 15 | -08 | 04 | -00 | -18 | 04 | -02 | 62 |

TABLE 2 continued

| Item | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Comm. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 31 | 64 | 07 | -06 | 04 | -01 | 01 | -10 | -49 | -05 | 02 | 67 |
| 32 | 73 | 05 | -00 | -02 | -04 | 01 | -09 | -23 | 15 | -10 | 63 |
| 33 | -13 | -05 | 01 | -02 | 76 | -06 | 11 | -06 | -04 | -00 | 62 |
| 34 | -01 | -14 | 21 | 59 | -26 | 00 | 11 | -14 | -11 | -07 | 53 |
| 35 | 16 | 03 | 58 | 14 | -31 | -11 | 01 | 04 | -15 | -22 | 56 |
| 36 | 73 | 05 | 07 | -06 | -22 | 03 | -13 | -15 | -05 | 08 | 64 |
| 37 | 45 | -04 | 28 | -13 | -24 | 02 | -21 | -29 | 02 | 10 | 50 |
| 38 | 67 | -01 | 27 | -03 | -09 | -13 | -10 | -18 | -10 | 07 | 60 |
| 39 | 42 | -03 | 02 | 01 | -02 | 06 | -13 | -70 | -00 | 08 | 70 |
| 40 | 27 | 32 | 25 | -01 | -02 | -37 | -06 | -36 | 04 | 07 | 52 |
| SS | 7.74 | 1.60 | 2.02 | 1.77 | 2.24 | 1.53 | 1.60 | 1.68 | 1.97 | 1.41 | 23.56 |
| % | 19.4 | 4.0 | 5.1 | 4.4 | 5.6 | 3.8 | 4.0 | 4.2 | 4.9 | 3.5 | 58.9 |
| SE | .16 | .16 | .17 | .17 | .17 | .17 | .18 | .18 | .18 | .18 | |

Note--Decimal points omitted for the loadings and communalities.

SS is Sums of squares of loadings, including their total at the far right, for the communality.

% is the percent of total variance accounted for by that factor, and the total common-factor variance or communality, at the far right.

SE is the standard error of a factor loading as calculated by the method of Burt and Banks (1947).

APPENDIX F

TABLE 3

Rotated Factor Loadings and Communalities
for the Faculty in Education

TABLE 3

Rotated Factor Loadings and Communalities
for the Faculty in Education

| Item | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Comm. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | -39 | -14 | -06 | -18 | -01 | -56 | 08 | 31 | -14 | 23 | 70 |
| 2 | 33 | 35 | -16 | 22 | -30 | 27 | 15 | -08 | 01 | -00 | 50 |
| 3 | 18 | -02 | -27 | 64 | -21 | 07 | 11 | -04 | -12 | -06 | 60 |
| 4 | 13 | 18 | 29 | 67 | -20 | 12 | -12 | 21 | -06 | -10 | 71 |
| 5 | -02 | -09 | 01 | 78 | -16 | 03 | 13 | -06 | 22 | 08 | 72 |
| 6 | -63 | 08 | 36 | -12 | 06 | -22 | 07 | 08 | -21 | 12 | 67 |
| 7 | 41 | -02 | -25 | 08 | 12 | 35 | 33 | 03 | 27 | 20 | 60 |
| 8 | -33 | -31 | 26 | -03 | 16 | -19 | 14 | -17 | -17 | 43 | 60 |
| 9 | -06 | 55 | 14 | -02 | -35 | -01 | 20 | 04 | 10 | 04 | 50 |
| 10 | -62 | -02 | 19 | -49 | -04 | 14 | 02 | 22 | 02 | 14 | 75 |
| 11 | 59 | 08 | -03 | 25 | 02 | 19 | 28 | -20 | 08 | -25 | 64 |
| 12 | 39 | -04 | -18 | 04 | -24 | 52 | 17 | -33 | 11 | -11 | 67 |
| 13 | 16 | 13 | -19 | 01 | -14 | 05 | 04 | 14 | 68 | -14 | 60 |
| 14 | 72 | 07 | -07 | 14 | -02 | 22 | 28 | 01 | 15 | 11 | 70 |
| 15 | 69 | 15 | -14 | 17 | -22 | 23 | 00 | 07 | 05 | 05 | 66 |
| 16 | -22 | 08 | 04 | 06 | 16 | -17 | -06 | 83 | 05 | 06 | 81 |
| 17 | -36 | -22 | 60 | 18 | 15 | 06 | -03 | 20 | -19 | 34 | 78 |
| 18 | -15 | 14 | 74 | -06 | -07 | -10 | 02 | -08 | -05 | 10 | 63 |
| 19 | -06 | -01 | 01 | -01 | 14 | 03 | -02 | 04 | -09 | 83 | 73 |
| 20 | -57 | 022 | 34 | -09 | -04 | -08 | -08 | 24 | -17 | 07 | 60 |
| 21 | -22 | -03 | 00 | -09 | 29 | -16 | -03 | 16 | -63 | 13 | 61 |
| 22 | -46 | -18 | 17 | 04 | 20 | -20 | -38 | 02 | -36 | -08 | 64 |
| 23 | -46 | -06 | 43 | -03 | 34 | -36 | 19 | 10 | -11 | -09 | 72 |
| 24 | 04 | -13 | 22 | -12 | 31 | -20 | -34 | 03 | 01 | 47 | 55 |
| 25 | -23 | 02 | -04 | -18 | 74 | -09 | 13 | -01 | -08 | 15 | 69 |
| 26 | -63 | 20 | 37 | 04 | 24 | -25 | -02 | 00 | -05 | -00 | 70 |
| 27 | -18 | 22 | 25 | 18 | 21 | -28 | -01 | -37 | 08 | 32 | 55 |
| 28 | -02 | -09 | 05 | -09 | 72 | -18 | 02 | 05 | -03 | 18 | 61 |
| 29 | 16 | 84 | -02 | -05 | -04 | 00 | 04 | 03 | 11 | -01 | 75 |
| 30 | 75 | 22 | -08 | 03 | 01 | 05 | 37 | -10 | 05 | -16 | 79 |

TABLE 3 continued

| Item | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Comm. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 31 | 72 | 22 | -01 | -04 | -09 | 30 | 04 | -02 | 06 | 05 | 68 |
| 32 | 77 | 04 | -00 | -00 | -32 | -02 | 17 | 03 | -03 | -12 | 74 |
| 33 | -15 | -12 | 24 | -05 | 46 | -09 | -40 | -00 | 42 | -06 | 66 |
| 34 | 37 | -11 | 26 | -05 | -36 | 13 | 46 | 23 | 05 | -20 | 67 |
| 35 | 20 | 08 | -17 | -02 | -21 | 67 | 28 | 15 | -04 | 10 | 68 |
| 36 | 76 | -01 | -01 | -03 | -23 | 12 | 10 | -09 | 05 | -18 | 70 |
| 37 | 63 | 23 | 06 | 11 | -32 | 36 | -19 | 01 | -00 | -02 | 72 |
| 38 | 63 | 02 | -23 | 00 | -15 | 46 | 17 | -15 | 15 | -10 | 77 |
| 39 | 38 | 16 | 04 | 11 | -06 | 66 | 11 | -16 | 13 | -14 | 70 |
| 40 | 21 | 65 | 03 | 08 | -08 | 26 | -01 | -03 | -09 | -20 | 59 |
| 41 | -24 | -11 | -07 | -08 | 09 | -13 | -67 | 11 | -02 | 06 | 57 |
| 42 | 19 | 20 | 03 | 18 | -78 | 01 | 23 | -01 | 12 | -13 | 81 |
| 43 | -23 | -13 | 08 | -09 | 82 | -03 | -24 | 16 | -20 | 12 | 90 |
| SS | 7.97 | 2.32 | 2.31 | 2.17 | 4.05 | 2.95 | 2.02 | 1.56 | 1.69 | 1.91 | 28.9 |
| % | 18.5 | 5.4 | 5.4 | 5.0 | 9.4 | 6.9 | 4.7 | 3.5 | 3.9 | 4.4 | 67.3 |
| SE | .27 | .27 | .28 | .29 | .30 | .31 | .31 | .32 | .33 | .34 | |

Note--Decimal points omitted for the loadings and communalities.

SS is Sums of squares of loadings, including their total at the far right, for the communality.

% is the percent of total variance accounted for by that factor, and the total common-factor variance or communality, at the far right.

SE is the standard error of a factor loading as calculated by the method of Burt and Banks (1947).

APPENDIX G

TABLE 4

Means, Standard Deviations, and Comparison of Means on Items

Table 4

Means, Standard Deviations, and Comparison of Means on Items

| Item | Means | | | Standard Deviations | | | F | p | Signif. Diffs.[a] |
|---|---|---|---|---|---|---|---|---|---|
| | Grp. 1 | Grp. 2 | Grp. 3 | Grp. 1 | Grp. 2 | Grp. 3 | | | |
| 1 | 2.75 | 2.60 | 2.41 | 1.16 | 1.24 | 1.14 | 2.98 | .050 | 1 and 3 |
| 2 | 3.89 | 3.85 | 4.17 | 0.83 | 1.03 | 0.60 | 4.25 | .015 | none |
| 3 | 3.56 | 3.73 | 4.00 | 0.96 | 1.04 | 0.83 | 7.09 | .001 | 1 and 3 |
| 4 | 3.58 | 3.60 | 3.92 | 1.02 | 1.06 | 0.89 | 4.01 | .019 | 1 and 3 |
| 5 | 3.77 | 3.75 | 4.18 | 0.83 | 1.01 | 0.70 | 8.49 | .000 | 1,3; 2,3 |
| 6 | 2.59 | 2.83 | 2.70 | 1.14 | 1.17 | 1.16 | 0.83 | .439 | none |
| 7 | 2.85 | 2.95 | 3.20 | 1.05 | 1.15 | 0.95 | 3.71 | .025 | 1 and 3 |
| 8 | 2.81 | 2.30 | 2.43 | 1.07 | 0.94 | 0.92 | 7.33 | .001 | 1,2; 1,3 |
| 9 | 3.97 | 4.00 | 3.97 | 0.85 | 0.91 | 0.87 | 0.04 | .954 | none |
| 10 | 2.61 | 3.05 | 2.19 | 1.04 | 1.06 | 0.86 | 11.10 | .000 | all three |
| 11 | 3.30 | 2.85 | 3.39 | 0.96 | 1.05 | 0.86 | 4.78 | .009 | 1,2; 2,3 |
| 12 | 3.68 | 3.68 | 3.66 | 0.90 | 1.12 | 0.94 | 0.27 | .962 | none |
| 13 | 2.71 | 2.48 | 3.03 | 1.07 | 1.24 | 1.02 | 4.49 | .012 | 1,3; 2,3 |
| 14 | 3.13 | 2.83 | 3.32 | 1.01 | 1.08 | 0.87 | 3.65 | .026 | 2 and 3 |
| 15 | 3.79 | 3.53 | 3.77 | 0.97 | 1.15 | 0.77 | 1.31 | .271 | none |
| 16 | 2.16 | 2.18 | 2.02 | 0.85 | 0.90 | 0.83 | 0.93 | .398 | none |
| 17 | 2.79 | 2.48 | 2.36 | 1.10 | 1.18 | 0.95 | 5.60 | .004 | 1 and 3 |
| 18 | 2.96 | 2.70 | 2.89 | 1.01 | 1.07 | 1.02 | 1.23 | .294 | none |
| 19 | 3.46 | 2.80 | 2.44 | 0.96 | 1.14 | 0.82 | 40.85 | .000 | 1,2; 1,3 |
| 20 | 2.58 | 2.60 | 2.27 | 1.00 | 0.98 | 0.83 | 3.39 | .034 | none |
| 21 | 2.70 | 2.45 | 2.20 | 1.08 | 1.18 | 0.75 | 8.26 | .000 | 1 and 3 |
| 22 | 2.19 | 2.35 | 2.12 | 0.81 | 1.05 | 0.79 | 0.94 | .395 | none |
| 23 | 2.40 | 2.38 | 2.20 | 1.05 | 1.05 | 0.95 | 1.13 | .326 | none |
| 24 | 2.28 | 1.98 | 2.06 | 0.97 | 0.77 | 0.69 | 3.17 | .042 | none |
| 25 | 1.56 | 1.63 | 1.63 | 0.62 | 0.77 | 0.53 | 0.60 | .554 | none |
| 26 | 2.85 | 3.15 | 2.58 | 1.18 | 1.33 | 1.22 | 3.59 | .028 | 2 and 3 |
| 27 | 3.08 | 2.63 | 2.47 | 1.00 | 1.05 | 0.96 | 14.15 | .000 | 1,2; 1,3 |
| 28 | 1.64 | 1.88 | 1.79 | 0.65 | 0.97 | 0.57 | 3.51 | .030 | none |
| 29 | 3.70 | 3.80 | 3.68 | 0.85 | 0.97 | 0.82 | 0.31 | .740 | none |
| 30 | 3.51 | 3.08 | 3.54 | 0.92 | 1.07 | 0.88 | 4.14 | .016 | 1,2; 2,3 |
| 31 | 3.26 | 2.93 | 3.66 | 1.11 | 1.12 | 0.96 | 7.53 | .001 | 1,3; 2,3 |
| 32 | 3.58 | 3.45 | 3.90 | 0.87 | 0.99 | 0.70 | 5.77 | .004 | 1,3; 2,3 |
| 33 | 1.59 | 1.78 | 1.80 | 0.69 | 0.62 | 0.69 | 3.93 | .020 | 1 and 3 |
| 34 | 3.81 | 4.00 | 3.92 | 0.80 | 0.78 | 0.62 | 1.58 | .205 | none |
| 35 | 3.71 | 3.48 | 3.36 | 0.90 | 1.04 | 0.83 | 5.80 | .004 | 1 and 3 |
| 36 | 3.76 | 3.28 | 3.79 | 0.88 | 1.13 | 0.79 | 5.63 | .004 | 1,2; 2,3 |
| 37 | 3.92 | 3.90 | 3.86 | 0.82 | 0.87 | 0.82 | 0.17 | .845 | none |
| 38 | 3.52 | 3.20 | 3.52 | 0.94 | 1.24 | 0.96 | 1.88 | .152 | none |
| 39 | 3.13 | 2.80 | 3.32 | 1.04 | 1.14 | 0.96 | 3.63 | .027 | 2 and 3 |
| 40 | 3.72 | 3.58 | 3.68 | 0.83 | 0.98 | 0.85 | 0.57 | .571 | none |

[a]Pairs of means that differ significantly at the .05 level using the Student-Newman-Keuls procedure.